THE ENGINEERING LOG SHALL BE PREPARED IN THE MANNER AND FORM PRESCRIBED BY THE COMMANDER, NAVAL SEA SYSTEMS COMMAND (NSTM CHAPTER 090 REFERS).

424. THE ENGINEER'S BELL BOOK

a. *THE ENGINEER'S BELL BOOK SHALL BE A CHRONOLOGICAL RECORD OF ORDERS PERTAINING TO THE SPEED OF THE PROPULSION ENGINES OR MOTORS. IT SHALL SHOW FOR THE SHAFT TO WHICH IT PERTAINS, EACH TIME A PROPELLER SPEED IS ORDERED, THE MEANING OF SUCH ORDER, AND THE CORRESPONDING REVOLUTIONS PER MINUTE. SHIPS AND CRAFT EQUIPPED WITH CONTROLLABLE PITCH PROPELLERS SHALL, IN ADDITION TO SIGNALED SPEED AND REVOLUTIONS PER MINUTE, RECORD PROPELLER PITCH FOR EACH SIGNALED CHANGE IN SPEED. THE SHAFT COUNTER READINGS SHALL BE RECORDED UPON GETTING UNDERWAY, HOURLY THEREAFTER, AND UPON SECURING THE ENGINE. ALL OTHER ENTRIES SHALL BE MADE UPON RECEIPT OF EACH ORDER. NAVAL SHIPS TECHNICAL MANUAL, CHAPTER 090 PROVIDES SPECIFIC GUIDANCE ON REQUIRED ENTRIES.*

b. *WHEN PROPULSION ENGINES OR MOTORS ARE CONTROLLED DIRECTLY BY THE BRIDGE THROUGH ELECTRO/MECHANICAL/ELECTRONIC MEANS, THE BELL BOOK NEED NOT INCLUDE ENGINE ORDERS PROVIDED THE DECK LOG RECORDS SUCH ORDERS. THE BELL BOOK AND DECK LOG SHALL SHOW THE TIME THE CONTROL OF ENGINES OR MOTORS IS ASSUMED AND RELINQUISHED BY THE BRIDGE.*

c. *FOR SHIPS NOT EQUIPPED WITH AUTOMATIC BELL LOGGERS, TWO PERSONS SHALL BE STATIONED AT THE THROTTLE CONTROL STATION, DURING MANEUVERING OPERATIONS IN RESTRICTED WATERS, TO EXECUTE AND RECORD ENGINE ORDERS SEPARATELY.*

d. *ON SHIPS WHERE BELL BOOK ENTRIES ARE RECORDED THROUGH USE OF ELECTRONIC BELL/DATA LOGGER, EQUIPMENT BEING PLACED OUT OF COMMISSION DOES NOT ALLEVIATE THE SHIP OF THE RESPONSIBILITY TO MAINTAIN A BELL BOOK AS DESCRIBED ABOVE. SHOULD SUCH A CASUALTY OCCUR, A BELL BOOK WILL BE ESTABLISHED ON THE BRIDGE, PROPULSION CENTRAL CONTROL STATION, OR MAIN ENGINE ROOMS, AS PRESCRIBED BY THE COMMANDING OFFICER.*

430. THE WATCH ORGANIZATION UNDERWAY. The shipboard watch organization underway is based on the condition of readiness and the tactical environment. Although a Tactical Commander's organization is normally transparent to shipboard watch structures, the Composite Warfare Commander Doctrine may be the doctrine under which individual ships will operate when assigned to tactical organizations such as a Carrier Battle Group (CVBG), Surface Combatant Task Group (SCTG), or Amphibious Task Force/ Task Group (ATF/ATG). It is therefore necessary tactical knowledge for all non-engineering watchstanders underway. The following section provides general information. Specific details

can be found in the Composite Warfare Commander's Manual (NWP 10-1).

430.1 COMPOSITE WARFARE COMMANDER DOCTRINE. The threat to U.S. naval forces has increased rapidly in severity. Potentially hostile air, surface, and subsurface forces have been strengthened through the development of improved weapons, sensors, and delivery systems, deployed in increasingly large numbers of platforms designed specifically for their use. Because of the increases in the system capabilities and numbers of potentially hostile forces, the reaction time that is available to friendly forces during combat has been significantly reduced. In order to provide for adequate response within the shorter available reaction time, a Composite Warfare Commander (CWC) doctrine has been developed for ships and staffs operating in Battle Groups or Battle Forces. The doctrine aligns responsibilities within the force for surveillance and reaction, and emphasizes the decentralization of authority for tactical decisions in combat. These improved procedures are more responsive under reduced reaction time and enable the Officer in Tactical Command (OTC) to make more effective use of the sensors and weapons systems of the force.

The CWC doctrine embodies a basic organizational structure that is conducive to flexible implementation, and a body of recommended operational principles, with their associated supporting procedures. Use of this doctrine enables the OTC of a naval force at sea to aggressively wage combat operations against air, surface, and subsurface threats while carrying out the primary mission of the force. The OTC can implement the doctrine whenever, and to whatever extent, he may require, depending upon the composition and mission of the force and the nature and severity of the threats that are faced.

Figure 4-1 illustrates the CWC command structure. The OTC/CWC exercises overall responsibility for command and control of the force. Subordinate to the CWC are three principal warfare commanders, the Antiair Warfare Commander (AAWC), Antisurface Warfare Commander (ASUWC), and Antisubmarine Warfare Commander (ASWC). The warfare commanders are responsible for collecting, evaluating, and disseminating tactical information and, at the discretion of the CWC, are delegated authority to respond to threats with assigned forces. Supporting the CWC and the warfare commanders are the Submarine Element Coordinator (SEC), a cell of the ASWC staff, who, when assigned, is responsible for coordinating the actions of direct support submarines, and the Air Element Coordinator (AREC) who is responsible for managing and coordinating the distribution of carrier aircraft and keeping

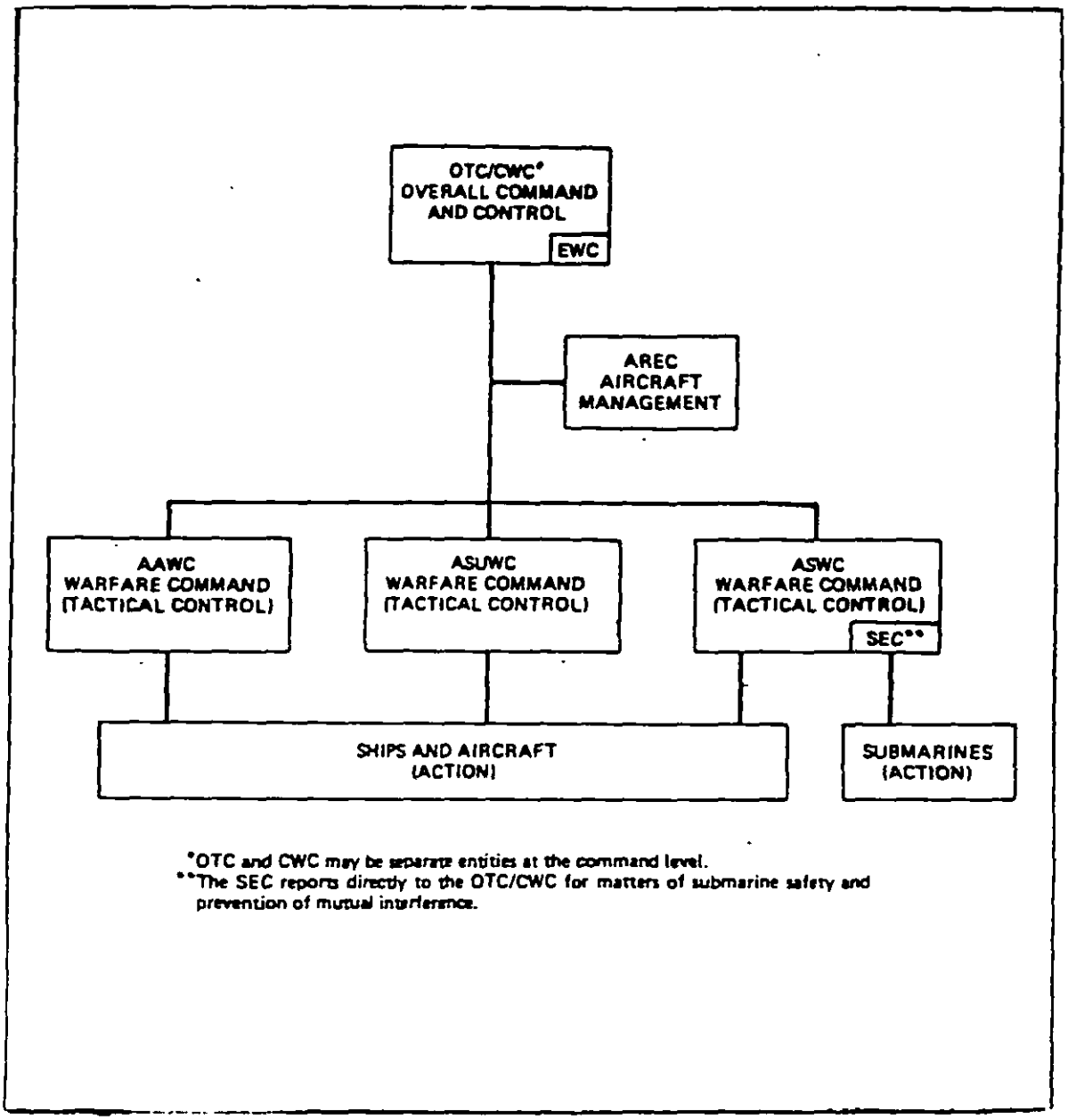

Figure 4-1. CWC Command Structure

the CWC and other warfare commanders and coordinators apprised of carrier air operations.

The OTC will normally be the CWC. Nevertheless, Figure 4-1 shows the OTC and the CWC as separate entities at the command level to provide for special conditions that may require the OTC to delegate the CWC function.

The NWP 10-1 (NOTAL) series of tactical publications should be consulted for current CWC doctrine. A complete understanding of CWC doctrine and current Task or Battle Group CWC organization is imperative to support full coordination of the shipboard combat organization. NWP 10-1 (NOTAL) is the leading publication of the NWP 10 series and is complementary to NWP 8 (NOTAL), which describes the overall military command and control structure. The concepts described in these two publications will govern future tactical development and design of afloat command and control support systems and facilities. NWP 8 (NOTAL), NWP 10-1 (NOTAL), and the NWP 10 (NOTAL) series will thus be of importance in the development of operational guidelines for the afloat node of the Navy Command and Control System (NCCS)--Tactical Flag Command Center (TFCC).

430.2. SHIPBOARD CONDITIONS OF READINESS. Underway watch conditions depend on the readiness level required to meet the ship's current or expected situation. Condition IV is the condition of readiness for optimum peacetime cruising, condition III is the condition of readiness for combatting single warfare area threats for extended periods. Condition I is the highest degree of readiness and is intended primarily to combat the ship's primary mission area threat or multiple threats. Certain types of ships modify condition I to accomplish specific missions (condition II). Depending on the condition of readiness, various watch stations are manned. Manning requirements vary with individual ship types, and specific Condition watches are contained in applicable type Ship's Manning Document and/or Combat Systems Doctrine.

431. SHIP CONTROL WATCHES

431.1. COMMAND DUTY OFFICER UNDERWAY

a. BASIC FUNCTION. If assigned, the Command Duty Officer (CDO) Underway is that officer, eligible for command at sea, empowered by the Commanding Officer for a specified watch to supervise and direct the Officer of the Deck (OOD) in matters concerning the general operation and safety of the ship.

b. DUTIES, RESPONSIBILITIES, AND AUTHORITY. When assigned, the CDO Underway shall:

(1) Keep informed of the tactical situation and of factors affecting the safe navigation of the ship, such as steaming formations, ship's position, other ships movements, land, and shallow water areas.

(2) Keep informed concerning effective operation plans and orders, signals, intentions of OTC and the Commanding Officer, and other matters concerning the ship or force operations.

(3) Be familiar with tactical publications, voice radio communication procedures, recognition and authentication procedures, and the U. S. Coast Guard Navigation Rules of the Road.

(4) Keep informed of the operating procedures of the ship.

(5) Keep informed of the status of the bridge watch, and ensure that the OOD maintains an alert and efficient watch.

(6) Advise or direct the OOD as required in the ship's operation, and in time of danger or emergency take command action until the Commanding Officer or the Executive Officer relieves the CDO of his/her responsibilities on the bridge.

(7) Ensure that the OOD makes all required reports to the Commanding Officer and to the Flag (when embarked).

(8) If authorized by the Commanding Officer in writing, relieve the OOD when necessary to ensure the safety of the ship and inform the Commanding Officer immediately.

(9) Coordinate the man aloft program in port and underway following ship's directives. Allow no one to go aloft unless they meet qualifications required by ship's directives. Be familiar with the ship's particular hazards of electronic radiation to personnel/ordnance (HERP/HERO) restrictions before permitting anyone to go aloft. Manage the combat systems and operations departments tag out log following OPNAV and ship's directives.

(10) Perform other duties as required.

c. ORGANIZATIONAL RELATIONSHIPS. While on watch, the CDO Underway, if so empowered by the Commanding Officer, has the same relationship with the OOD as that prescribed for the Executive

Officer. The CDO Underway reports to the Commanding Officer for all matters affecting the watch and to the Executive Officer concerning the internal administration of the ship. The OOD shall make routine reports to the Commanding Officer and the CDO.

431.2. TACTICAL ACTION OFFICER

a. BASIC FUNCTION. When assigned, the Tactical Action Officer (TAO) is the Commanding Officer's representative concerning the tactical employment and the defense of the unit.

b. DUTIES, RESPONSIBILITIES, AND AUTHORITY. The TAO is responsible for the safe and effective operation of the combat systems of the unit (including aircraft under the unit's tactical control) and for any other duties prescribed by the Commanding Officer. The TAO is responsible for the smooth and efficient operation of the Combat Information Center (CIC) including collection, display, and dissemination of tactical and other operationally significant data. Circumstances permitting, the TAO shall carry out promptly and precisely special orders and shall report any deviations to the Commanding Officer. The TAO shall keep the Commanding Officer fully informed of the current tactical picture and will immediately inform the Commanding Officer on any and all matters which pose a potential combat threat to the unit. The TAO, when authorized by the Commanding Officer will direct the employment of weapons and direct the Officer of the Deck to maneuver as required to fight or defend the unit. The TAO will stand watch in CIC.

c. ORGANIZATIONAL RELATIONSHIPS. The TAO reports directly to the Commanding Officer concerning the tactical employment and defense of the unit; to the appropriate department heads for any actual or potential problems in the combat system which may affect the unit's offensive or defensive capability; and to the OOD for ship maneuvering and inform the OOD of the status of combat systems and the tactical situation. The Executive Officer may direct the TAO in the general duties and safety of the unit. When the Commanding Officer is not present, the Executive Officer may direct the TAO in time of danger or emergency. He/she may relieve the TAO and will do so should it, in his/her judgement, be necessary. The Commanding Officer will be promptly informed of such action.

(1) RELATIONS WITH THE OFFICER OF THE DECK. When so authorized by the Commanding Officer, the TAO may direct the OOD to take tactical actions required to fight or defend the unit. When, in the opinion of the OOD, such direction will cause immediate danger to the unit, the OOD shall decline such direction and immediately advise the Commanding Officer. In all

cases the Commanding officer should be advised of any action outside of standard procedures.

(2) RELATIONS WITH THE CIC AND WARFARE WATCH OFFICERS/ COORDINATORS. The CIC and warfare watch officers/coordinators (when assigned) report to the TAO for all matters concerning the tactical employment and defense of the ship.

(3) REPORTS TO SENIORS. The TAO will inform the Commanding Officer and appropriate Department Heads of any actual or potential problem in the combat system which may effect the unit's offensive or defensive capabilities. He also will inform superiors in the tactical chain-of-command (i.e., Warfare Commander, OTC) of such combat system status.

(4) REPORTS REQUIRED BY TACTICAL ACTION OFFICER. The TAO will be informed promptly of any combat system change that may affect the fighting capabilities of the unit.

431.3 OFFICER OF THE DECK UNDERWAY (OOD)

a. BASIC FUNCTION. The Officer of the Deck (OOD) underway has been designated by the Commanding Officer to be in charge of the ship including its safe and proper operation.

b. DUTIES, RESPONSIBILITIES, AND AUTHORITY. The OOD Underway shall:

(1) Be aware of the tactical situation and geographic factors which may affect safe navigation and take action to avoid the danger of grounding or collision following tactical doctrine, the U. S. Coast Guard Navigation Rules of the Road, and the orders of the Commanding Officer or other proper authority.

(2) Be informed of current operation plans and orders, intentions of the OTC and the Commanding Officer, and other matters of ship or force operations.

(3) Issue necessary orders to the helm and main engine control to avoid danger, to take or keep an assigned station, and to change course and speed following orders of proper authority.

(4) Make all required reports to the Commanding officer. When a CDO is specified for the watch, make the same reports to the CDO.

(5) Ensure that required reports to the OOD concerning tests and inspections and the routine reports of patrols, watches, and lifeboat crews are made promptly and that the bridge watch and lookouts are posted and alert.

(6) Supervise the personnel on watch on the bridge, ensure that all required deck log entries are made, and sign the log at the end of the watch.

(7) Issue orders for rendering honors to passing ships as required by regulations and custom.

(8) Ensure that the Executive Officer, CDO (when assigned), and department heads concerned remain informed of changes in the tactical situation, operation schedule, the approach of heavy weather, and other circumstances which may require a change in the ship's routine or other actions.

(9) Be aware of the status of the engineering plant, and keep the Engineering Officer of the Watch advised of power requirements and the operational situation so he/she may operate the engineering plant effectively.

(10) Carry out the routine of the ship as published in the plan of the day and other ship directives. Keep the Executive Officer advised of any changes in routine.

(11) Supervise usage of the general announcing system; the general, chemical, collision, sonar, and steering casualty alarms; and the whistle following the orders of the Commanding Officer, tactical doctrine, and the U. S. Coast Guard Navigation Rules of the Road.

(12) Permit no person to go aloft on the masts or stacks or to work over the side except when wind and sea conditions permit and then only when all applicable safety precautions are observed.

(13) Supervise transmissions and acknowledgements on the primary and secondary tactical voice radio circuits, and ensure that proper phraseology and procedures are used in all transmissions.

(14) Supervise and conduct on-the-job training for the Junior Officer of the Watch (JOOW), the Junior Officer of the Deck (JOOD), and enlisted personnel of the bridge watch.

(15) Assume other responsibilities as assigned by the Commanding Officer.

(16) Supervise the striking of the ship's bell to denote the hours and the half-hours from reveille to taps. Request permission of the Commanding Officer to strike eight bells at the hours of 0800, 1200, and 2000.

(17) On ships that do not station a damage control watch officer, supervise the maintenance of a log of all fittings which are in violation of the material condition of readiness prescribed. Entries will show the name and rate of the person requesting permission to open a fitting, approximate length of time to be open, and time closed. Anyone, without permission, who violates the material condition of readiness in effect shall be the subject of an official report.

(18) Permit no person on weather decks during heavy weather conditions without permission of the Officer of the Deck and then only when all applicable safety precautions are observed.

c. ORGANIZATIONAL RELATIONSHIPS. The OOD reports directly to the Commanding Officer for the safe navigation and general operation of the ship; to the Executive Officer (and CDO if appointed) for carrying out the ship's routine; and to the Navigator on sighting navigational landmarks, and on making course/speed changes. The following personnel report to the OOD:

(1) The TAO for directing ship maneuvering if authorized by the Commanding Officer and inform the OOD of the status of combat systems and the tactical situation.

(2) The Junior Officer of the Deck (JOOD) and the Junior Officer of the Watch (JOOW) concerning their duties and on-watch training.

(3) The CIC Watch Officer (when a TAO is not assigned) concerning air and surface radar search and tracking, combat and tactical information affecting maneuvering and safe navigation, and sonar search on ships provided with sonar equipment but not an ASW weapon battery.

(4) The EOOW for the prompt and proper execution of all engine orders.

(5) The Diving Officer of the Watch on a submarine for the safe and proper control of the ship while submerged.

(6) The Communication Watch Officer for transmission and receipt of visual signals and other communications affecting the operations or maneuvering of the ship.

(7) The Quartermaster of the Watch (QMOW) for the supervision of the Helmsman (when senior to the Boatswain's Mate of the Watch), for the proper maintenance of the Deck Log, and for navigational matters.

(8) The Damage Control Watch for reporting and controlling hull damage and casualties and for setting and maintaining prescribed material conditions.

(9) The Boatswain's Mate of the Watch (BMOW) for supervision of the lifeboat and life buoy watches; for supervision of the Helmsman when senior to the QMOW; for supervision of the air and surface lookouts; for the operation of the engine order telegraph, engine revolution indicator, and general announcing system; for supervision of the 1JV phone talkers; and for supervision of fog and other special watches.

(10) The bridge talkers for relay and display of information received from various control stations.

(11) The Duty Master-at-Arms for the discipline and good order of the crew.

(12) The Duty Brig Watch for performance of brig personnel and prisoners.

(13) The Oceanography Officer or Weather Watch Officer, when assigned, for the provision of forecasts, warnings, and advisories of weather and sea conditions affecting the operations and maneuvering of the ship.

431.4. JUNIOR OFFICER OF THE DECK UNDERWAY (JOOD)

a. BASIC FUNCTION. The Junior Officer of the Deck (JOOD) (when assigned) is the principal assistant to the OOD. During Condition IV the JOOD should be an "as required" watch.

b. DUTIES, RESPONSIBILITIES, AND AUTHORITY. The JOOD shall:

(1) Assist the OOD in his/her duties as the OOD may direct.

(2) Become familiar with the duties of the OOD in order to qualify as OOD.

(3) Perform other duties as the OOD may direct.

c. ORGANIZATIONAL RELATIONSHIPS. The JOOD reports to the OOD while on watch.

The following report to the JOOD:

(1) All persons making routine reports to the OOD will report via the JOOD.

(2) Members of the watch as the OOD may direct.

431.5 JUNIOR OFFICER OF THE WATCH UNDERWAY (JOOW)

a. BASIC FUNCTION. The Junior Officer of the Watch (JOOW) (when assigned) is an additional line officer on watch under instruction for qualification as OOD. The JOOW will stand the watch in the pilot house but may be stationed on the open bridge during complex tactical operations or when directed by the OOD for indoctrinational purposes.

b. DUTIES, RESPONSIBILITIES, AND AUTHORITY. The JOOW shall:

(1) Assist the OOD in his/her duties as the OOD may direct.

(2) Become familiar with the duties of the OOD in order to qualify as OOD.

(3) Ensure that the ship's routine is conducted according to the Plan of the Day and supervise the use of the general announcing system.

(4) Ensure required routine reports are accurate and promptly submitted to the OOD.

(5) Ensure that the watch is posted and alert and provide watch supervision as the OOD may direct.

(6) Perform other duties as the OOD may direct.

c. ORGANIZATIONAL RELATIONSHIPS. The JOOW reports to the OOD and to the Navigator through the Senior Watch Officer for training and assignment to watches. Routine reports to the OOD will be made through the JOOW when the JOOD is unavailable. Members of the watch may report to the JOOW, if so directed by the OOD.

431.6. CIC WATCH OFFICER

a. BASIC FUNCTION. The CIC Watch Officer (CICWO) is a representative of the CIC Officer and supervises the operation of the CIC during the watch period.

b. DUTIES, RESPONSIBILITIES AND AUTHORITY. The CIC Watch Officer shall:

(1) Supervise personnel on watch in the Combat Information Center, ensuring that air, surface, and submarine contacts are detected and reported within the capabilities of the

equipment; that summary and geographic plots and status boards are correct and current; that voice radio and phone circuits are manned; and that correct procedures and terminology are used.

(2) Evaluate operational information received in the Combat Information center by voice, radio, radar, sonar. electronic warfare support measures, visual lookouts, direction finders, intelligence, and dispatches.

(3) Disseminate evaluated information to appropriate control stations including the bridge, flag plot, war room, Strike Operations Center, air operations, air intelligence, secondary conn, and weapons control stations.

(4) Keep the OOD advised of recommended procedures for maintaining station, avoiding navigational hazards and collisions, and speed or course changes necessary to change or regain station.

(5) Control the use of radar, sonar, electronic warfare support measures/countermeasure equipment, and voice circuits (other than primary and secondary tactical circuits) as designated by the CIC Officer of the flag CIC Officer, if embarked.

(6) Alert the OOD when the OOD fails to acknowledge any transmission to the ship over the primary or secondary tactical circuits. Under no circumstances shall the CIC Watch Officer acknowledge a transmission on these circuits unless specifically authorized to do so by the OOD.

(7) Keep the OOD informed concerning all radars in operation and those under repair, and allow no radar to be intentionally disabled without permission of the Commanding Officer.

(8) Ensure that the CIC logs are properly maintained for the duration of the watch.

(9) Be familiar with the operation plans, orders, tactical publications, directives, and regulations of higher authority which affect the watch or the operation of the CIC.

(10) Supervise air controllers and strike controllers on watch in the control of aircraft during flight operations.

(11) Supervise and evaluate the on-the-job training of enlisted CIC personnel on watch, including the ship's lookouts.

(12) Be prepared to initiate search and rescue (SAR) procedures.

(13) When the ship is part of a task organization underway, be prepared to assume duties as the warfare commander, warfare coordinator, or TAO if necessary.

(14) Control the combat direction system, if no Combat Systems Officer of the Watch is assigned, including selection of the proper operational program, to provide a capability consistent with expected tactical environment.

(15) Report all landfalls; maintain navigation track and position when within radar range of land, when operations are conducted in dangerous or restricted waters and during sorties and entries; report to the OOD when the unit is standing into danger and as the OOD directs.

(16) Perform other duties as assigned.

c. ORGANIZATIONAL RELATIONSHIPS. The CIC Watch Officer reports directly to the TAO, when assigned, for matters pertaining to the tactical situation or the operation of combat systems. Otherwise the CICWO reports to:

(1) The OOD for:

(a) The conduct of radar, air, and surface search, and sonar search and tracking.

(b) Supplying combat and tactical information and making recommendations concerning the maneuvering and safe navigation of the ship.

(2) The Operations Officer, and the Strike Operations Officer, and, if a flag is embarked, to the appropriate Flag Duty Officer for:

(a) AAW, ASW, ASUW, and Strike Warfare information including strike reports, reports of battle damage sustained by friendly forces, and SAR incidents.

(b) Directions from higher authority and reports from friendly forces received on CIC controlled tactical circuits.

(3) The Oceanography Officer, when assigned, for the provision of environmental data and tactical decision aids.

(4) The CIC officer concerning the duties of watch.

d. The following report to the CIC Watch Officer:

(1) Modular CIC - All module watch officers/supervisors.

(2) Conventional CIC - All personnel of the CIC watch team; air and surface lookouts may report contacts directly to CIC but under the supervision of the BMOW.

(3) Sonar Supervisor - while conducting sonar search on ASW weapons system configured ships.

431.7 COMMUNICATIONS WATCH OFFICER

a. BASIC FUNCTION. The Communications Watch Officer (CWO) is a representative on watch of the Communications Officer. The CWO is responsible for the reliable, rapid, and secure conduct of external visual and radio communications. Although not responsible for the operation of tactical and air control voice radio, the CWO administers all communications hardware under his/her cognizance in support of tactical, air control, data, and administrative (non-operational) communication requirements. Additionally, the CWO is responsible for the efficient administration of internal routing and related communications systems.

b. DUTIES, RESPONSIBILITIES, AND AUTHORITY. The CWO shall:

(1) Direct main Communications Center personnel on watch in handling communications traffic, and exercise general supervision over the Crypto Center, radio rooms and the signal bridge watch through their respective supervisors.

(2) Ensure proper reproduction and internal routing, and expedite the delivery of all incoming visual and radio communications (with the exception of tactical signals) addressed to, or of interest to, the unit, the embarked flag, or other attached units.

(3) Ensure the release by proper authority of all outgoing traffic and direct transmission of messages.

(4) Ensure that all outgoing traffic is free of crypto-security violations. Should an error be noted after transmission of a message, the Communications Officer and Crypto Security Officer should be notified at once.

(5) Ensure the maintenance of the communications files and logs.

(6) Ensure the application of all communications-related directives and regulations.

(7) Know radio frequencies and transmitter setups in use by the Radio Officer or Communications Watch Supervisor. maintain discipline in the radio spaces, and ensure effective operation of the unit's radio equipment.

(8) Be proficient in all assigned crypto-aids and know the duties of the Crypto Security Officer. In his/her absence assume responsibility for the Crypto Center as follows:

(a) Maintain the security and readiness of the Crypto Center, including equipment and publications.

(b) Observe emission control (EMCON) condition in effect.

(9) At the beginning of each watch, conduct a sight inventory and accept custody of all publications assigned to main Communications Center. Assume responsibility for classified material following security regulations. Inventory and account for communications security material (CMS) as required.

(10) Be prepared to execute the emergency destruction of classified matter.

(11) Immediately inform the Communications Officer or the Crypto Security Officer of any significant incidents, violation of communications security, or failure of communications equipment. For equipment failure, consult with the Communications Officer to effect immediate repairs.

(12) Ensure that current watch bills are maintained in main radio, main Communications Center, and the signal bridge.

(13) Supervise on-the-job training of communications watch standers during the watch. Ensure that training is maximized and progress is recorded.

(14) Make "readiness for getting underway" and "manned and ready for GQ" reports for the Communications Department.

(15) Determine the routing and precedence of traffic and transmitter and receiver setup, subject to the approval of the Communications Officer and Radio Officer.

(16) Perform other duties as assigned.

c. ORGANIZATIONAL RELATIONSHIPS

(1) The CWO reports to the OOD for expeditious transmission and receipt of message traffic and general watch administra-

tion. The CWO coordinates directly with the CICWO and/or TAO for communications circuit requirements.

(2) The following report to the CWO:

(a) Radio watch supervisor.

(b) Signal bridge watch supervisor.

(c) Main communications and message center supervisor.

(d) Message center and crypto center messengers.

431.8. ENGINEERING OFFICER OF THE WATCH (EOOW)

a. BASIC FUNCTION. The Engineering Officer of the Watch (EOOW) is the officer or petty officer on watch designated by the Engineer Officer to be in charge of an Engineering Department watch section. He/she is responsible for safe and proper performance of engineering department watches following the orders of the Engineer Officer, the Commanding Officer, and higher authority.

b. DUTIES, RESPONSIBILITIES, AND AUTHORITY. The Engineering Officer of the Watch shall:

(1) Supervise personnel on watch in the Engineering Department (except damage control), ensuring that machinery is operated according to instructions, required logs are maintained, machinery and controls are properly manned, and all applicable inspections and safety precautions are carried out.

(2) Ensure that interior communication circuits are properly manned and that circuit discipline is maintained and correct procedures and terminology are followed.

(3) Ensure that all orders from the OOD concerning the speed and direction of rotation of the main engines are executed promptly and properly.

(4) Immediately execute all emergency orders concerning the speed and direction of rotation of the screws.

(5) Immediately inform the OOD and the Engineer Officer of any casualty which would prevent the execution of engine speed orders or would affect the operational capability of the ship.

(6) Ensure that directives and procedures issued by higher authority which concern the operation of machinery in the Engineering Department are followed.

(7) Keep informed of the power requirements for operations. Ensure that the propulsion and auxiliary machinery combination will effectively meet operational requirements. Advise the OOD and the Engineer Officer when any modification of the propulsion plant or major auxiliaries is required.

(8) Supervise and coordinate on-the-job training for engineering personnel on watch.

(9) Assume such other responsibilities as the Engineer Officer may direct.

(10) In addition, on nuclear-powered ships, the EOOW will also be governed by the requirements of the Engineering Department Manual for Nuclear Propulsion Plants (NOTAL).

c. ORGANIZATIONAL RELATIONSHIPS. The Engineer Officer or, if not present, the Main Propulsion Assistant (MPA) may direct the EOOW concerning the watch duties or relieve the EOOW if necessary. The EOOW reports to the OOD for the speed and direction of rotation of the main engines and for standby power requirements and other services. He/she reports to the Engineer Officer for technical control and matters affecting the watch administration. The following personnel report to the EOOW:

(1) Watch supervisor of the engineering department watches.

(2) Personnel in after steering for technical control.

431.9. DAMAGE CONTROL WATCH OFFICER

a. BASIC FUNCTION. The Damage Control Watch Officer (when assigned) is responsible for supervising the maintenance of any material condition of readiness in effect on the ship and for checking, repairing, and keeping in full operating condition the various hull systems.

b. DUTIES, RESPONSIBILITIES, AND AUTHORITY. The Damage Control Watch Officer shall:

(1) maintain a written damage control log which shall include hourly entries of the firemain pressure and the number of pumps on the firemain, and other entries such as getting underway, anchoring and mooring, general quarters, emergency

drills, and setting of material conditions with discrepancies reported and corrective action taken.

(2) Supervise maintenance of a log of all fittings which are in violation of the set material condition of readiness prescribed. Entries will show the name and rate of the person requesting permission to open a fitting, time the request is made, type of fitting, approximate length of time to be open, and time closed. Anyone who, without permission, violates the material condition of readiness in effect shall be made the subject of an official report.

(3) At the end of each watch, obtain a report from the Oil King on fuel tanks emptied during the watch; note the numbers of tanks in the damage control log and whether or not they have been ballasted.

(4) Report at least hourly to the OOD on the ship's watertight integrity.

(5) Underway, cause the damage control patrols to take and report soundings of all voids and cofferdams at least once each four-hour watch. In port, soundings shall be taken at least once each day. In addition, have these patrols check the material readiness in their areas and report corrective action taken.

(6) Cause the draft to be taken, or computed if at sea, and logged daily on the 04-08 watch, prior to entering or leaving port, and before and after fueling, provisioning, or rearming. In all classes of submarines, draft readings shall be observed and logged hourly when in port. Submarine in port duty officers shall review these draft entries periodically.

(7) Notify the OOD, Damage Control Assistant, and Weapons Department Duty Officer when the fire alarm board shows the temperature of any magazine is above 105 degrees F.

(8) Ensure that the master key to repair lockers is issued only to authorized personnel.

(9) Daily at 1700, request the OOD to pass the word, "All divisions check the setting of material condition Yoke and make reports to Damage Control Central." After a half-hour, ensure action by any division failing to report. Advise the OOD of any discrepancies between this report and the status reflected by the log maintained under paragraph (2) above.

c. ORGANIZATIONAL RELATIONSHIPS. The Damage Control Watch Officer reports directly to the OOD on all matters affecting

watertight integrity, stability, or other conditions affecting the safety of the ship. He/she reports to the Damage Control Assistant for technical control and matters affecting administration of the watch. Damage control patrols or the petty officers in charge of repair parties report to the Damage Control Watch Officer.

431.10. COMBAT SYSTEMS COORDINATOR

a. BASIC FUNCTION. If assigned, the Combat System Coordinator (CSC) is responsible for assisting the TAO in managing the Combat System and ensuring that the Combat System is operating at the highest degree of availability and effectiveness possible. The title of this watch station may vary between units depending upon hardware and software configurations.

b. DUTIES, RESPONSIBILITIES, AND AUTHORITY. The CSC will:

(1) Control the Combat System configuration. Initialize the system and enter appropriate weapons and system doctrine. Monitor system status, system operation, and allocate system resources to the warfare coordinators. Monitor the tactical situation and evaluate system performance in a tactical context. Under direction of the TAO, the CSC changes doctrine and system configuration. He acts as principal agent between the TAO and warfare coordinators for Combat System and weapon resource control.

(2) Be the primary interface between the Combat System and the Combat Systems Officer of the Watch (CSOOW). As relayed through the CSC, the CSOOW responds to the TAO's orders regarding system configuration and also generates information concerning system faults.

(3) Assume duties of warfare coordinators as directed.

431.11. COMBAT SYSTEMS WARFARE COORDINATORS. Depending upon the complexity of the combat system aboard, the mission areas assigned, and the relationships with the Composite Warfare Commanders and subordinate warfare commanders (CWC, AAWC, ASUWC, ASWC), a unit may need to assign onboard Warfare Coordinators to assist the TAO/CICWO. The NWP 65 series (NOTAL) of tactical publications provides a basis for individual ship Combat Systems Doctrine; these documents delineate the specific watch station, duties, and responsibilities.

431.12. COMBAT SYSTEMS OFFICER OF THE WATCH

a. BASIC FUNCTION. If assigned, the Combat Systems Officer of the Watch (CSOOW) is the officer or petty officer on watch who

has been designated by the Combat System Officer to be in charge of the combat system department equipment and those watches not concerned with tactical operations. He/she is primarily responsible for the safe and proper performance of the combat system department equipment following the orders of the Combat System Officer, the Commanding Officer, and higher authority.

b. DUTIES, RESPONSIBILITIES, AND AUTHORITY. The CSOOW will:

(1) Supervise the personnel on watch not concerned with tactical operations in the combat system department, making certain that equipment is operating within specified tolerances and limits, that required operating logs are maintained, that applicable inspections are being made, and that safety precautions are being observed.

(2) Ensure that interior communication devices in combat system department spaces under his/her survey are properly manned and that proper procedures and terminology are being used by combat system department personnel.

(3) Ensure that all orders received from the tactical action officer regarding the use and configuration of the combat system are promptly and properly executed.

(4) Ensure that all orders received from the OOD concerning personnel safety and ship safety are promptly and properly executed. Comply with all ships bills concerning safety precautions and Navy safety precautions in general.

(5) Ensure that the EOOW is advised of all anticipated support requirements.

(6) Immediately execute all emergency combat system operating sequences when required.

(7) Immediately inform the TAO and the Combat System Officer and, as time permits, the EOOW of any casualty which would prevent the execution of an order that would in any way affect the capability of the ship.

(8) Be familiar with and ensure application of all directives and procedures promulgated by higher authority which concern the operation of the combat system and the equipment which comprise it.

(9) Keep informed of the requirements placed upon the combat system by present and future operations and ensure that the availability of the combat system will effectively meet operational requirements, advising the TAO, CICWO during

Conditional IV, the Combat Systems Officer, and the EOOW when any modification is required.

(10) Supervise and coordinate on-the-job training for Combat System Department personnel on watch not concerned with tactical operations.

(11) Assume such other responsibilities as the Combat System Officer may direct.

c. ORGANIZATIONAL RELATIONSHIPS. The Combat System Officer or, in his/her absence, the System Test Officer may direct the CSOOW concerning the duties of his/her watch or relieve the CSOOW when such action is believed necessary. The CSOOW reports to the TAO via the CSC for the configuration of the combat system, present and anticipated. He/she reports to the OOD for all matters concerning personnel safety and the safety of the ship. He reports to the Combat System Officer for technical control and matters affecting the administration of his watch.

The following personnel report to the CSOOW:

1. All watch supervisors in the combat system central and personnel in the combat system rooms who are not concerned with tactical operations.

2. Personnel called to maintain equipment in any of the combat system equipment rooms.

431.13 WEATHER WATCH OFFICER

a. BASIC FUNCTION. On those ships with Aerographer's Mates (AGs) assigned, the Weather Watch Officer is an officer or senior petty officer who is a qualified forecaster.

b. DUTIES, RESPONSIBILITIES, AND AUTHORITY. The Weather Watch Officer will:

(1) Supervise the AGs on watch in the collection of environmental data.

(2) Prepare forecasts and warnings.

(3) Produce operational environmental products.

(4) Disseminate information as needed.

c. ORGANIZATIONAL RELATIONSHIPS. The Weather Watch Officer reports to the Oceanography Officer who in turn briefs the Commanding Officer and Embarked Flag. The Weather Watch Officer

will disseminate emergency information as necessary to such persons as Flight Deck Control, First Lieutenant, and OOD, etc.

432. DECK WATCHES

432.1. BOATSWAIN'S MATE OF THE WATCH. The Boatswain's Mate of the Watch (BMOW) (when assigned) shall stand his/her watch on the bridge. The BMOW should be assigned as required during Condition IV steaming. His/her primary duty shall be to assist the OOD in carrying out the ship's routine and ensuring the efficient functioning of the watch. He/she shall ensure by inspection that all members of the underway watch are posted, alert and are in the prescribed watchstanding uniform. In addition, he/she shall assist the OOD in supervising and instructing members of the watch, except the helmsman if the BMOW is junior to the QMOW, and shall report to the OOD when the watch has been properly relieved. He/she shall normally be under the direct supervision of the JOOW (when assigned) in the performance of assigned duties. This watch normally will be stood by a boatswain's mate from the Weapons/Deck Department who has been designated as qualified and assigned by the Ship's Boatswain, subject to the approval of the Senior Watch Officer.

432.2. LOOKOUTS, SKY AND SURFACE. The lookout watch will man assigned lookout stations and perform duties in accordance with ship's lookout directions. Lookouts will be relieved at least hourly. Although under the direct supervision of the OOD, lookouts will be trained by the CIC Officer. The posting and training of lookouts will conform to the U. S. Coast Guard Navigation Rules of the Road. During periods of Independent Ship Exercises (ISE) the duties of the forward lookout may be assigned to the signalman.

432.3. MESSENGER. The Messenger stands watch on the bridge and delivers messages, answers telephones, and carries out such duties as the OOD and BMOW may direct. The messenger will normally be assigned from the weapons/deck department.

432.4. BRIDGE SOUND-POWERED TELEPHONE TALKERS

a. JV TALKER. The JV Talker mans the JV phones on the bridge. He/she will know all other stations on the circuit and relay orders from the OOD to these stations including paralleling the orders of the engine order telegraph. In addition, he/she shall relay all information from these stations to the OOD. The JV Talker normally will be a Helmsman under instruction assigned from the weapons/deck department.

b. JL/JS TALKER. The JL/JS Talker mans the JL/JS phones on the bridge. He/she will know all other stations on the circuit

and relay orders from the OOD to these stations. In addition, the JL/JS Talker will advise the OOD of all information coming over the circuit. The JL/JS Talker will normally be assigned from the operations department.

432.5. LIFEBOAT WATCHES. Lifeboat watches are set to ensure that each ship is capable of rapidly recovering personnel from the sea. The maneuvering and seakeeping characteristics of the ship, sea conditions, availability of rescue helicopters, and nature of ship's operations will be factors in the readiness posture of lifeboat watches. Although lifeboat watches are not required on station at the lifeboat, crews should always be designated when at sea.

432.6. LIFE BUOY/AFTER LOOKOUT. The Life Buoy/After Lookout Watch will be stationed at a designated location aft. The watch will have a life ring affixed with a strobe light and will remain alert for persons overboard. In addition, he/she will man sound-powered phones and will check communications with the bridge at least every half-hour. During low visibility, this watch will be augmented by one person who will be the phone talker.

432.7. FOG LOOKOUTS (WHEN REQUIRED). The watch will be stationed during fog or reduced visibility to detect (either by hearing fog signals or actually sighting) approaching ships or craft. The watch is stood where approaching ships can best be seen or heard. The Fog Lookout must be in communication with the OOD and is normally assisted by a phone talker in order that the Fog Lookout's hearing is not impaired by the telephone. Although under the direct supervision of the OOD, Fog Lookouts will be trained by the CIC Officer. Posting and training of Fog Lookouts will meet requirements of the U. S. Coast Guard Rules of the Road.

433. ENGINEERING WATCHES. Due to the various engineering configurations, the engineering watches vary from ship type to ship type. Specific engineering watches and their responsibilities can be found in Ship's Manning Documents, and Type Commander and Ship's Engineering Department Organization and Regulations Manual.

434. COMBAT SYSTEM WATCHES. Specific combat system watches and their responsibilities can be found in NWP 65 series (NOTAL), Ship's Manning Documents, Type Commander and Ship's Combat Systems Doctrines, and Department Organization and Regulations Manuals.

435. NAVIGATION WATCHES

435.1. QUARTERMASTER OF THE WATCH. The Quartermaster of the Watch (QMOW) is stationed on the bridge. The watchstander shall be assigned from the Navigation Department/Division and shall:

a. Report to the OOD changes of weather, temperature and barometer readings (except on ships with a Meteorology Division);

b. Be a qualified helmsman and supervise the helmsman on watch if senior to the BMOW;

c. Execute sunset and sunrise procedures and instruct the messenger in calling officers and enlisted personnel at specified times;

d. Enter in the Ship's Log all data required by current instructions or as directed by the OOD;

e. Assist the OOD in navigational matters;

f. When BMOW is not assigned, assume the responsibilities of the BMOW;

g. Perform other duties as assigned.

435.2. HELMSMAN. A qualified helmsman, as recorded in the service record, will steer courses ordered by the Conning Officer. He/she will alternate with other members of the deck watch as directed by the Boatswain's Mate of the Watch and approved by the Conning Officer.

435.3. RESTRICTED MANEUVERING HELMSMAN. Restricted Maneuvering Helmsman will hold a higher qualification than the helmsman and will be utilized during all restricted maneuvering evolutions. His/Her relationship with the Conning Officer shall be the same as for a helmsman. He/She shall additionally be under the supervision of the Helm Safety Officer (also referred to as Ship Control Safety Officer).

435.4. LEE HELMSMAN. The Lee Helmsman will stand watch at the engine order telegraph on the bridge and will ring up the Conning Officer's orders to the engines ensuring that all bells are correctly answered. He/she must be a qualified helmsman. He/she will alternate with the other members of the deck watch as directed by the Boatswain's Mate of the Watch and approved by the Conning Officer.

435.5. AFTER STEERING. This watch is stationed in after steering to line up and operate the steering engines as directed

by the OOD and take over steering control in the event of a steering casualty. An electrician's mate and machinist's mate (when assigned) will be qualified to shift steering units and handle steering equipment emergencies. The After Steering Helmsman will be a qualified helmsman.

435.6. SHIP CONTROL SAFETY OFFICER. Whenever feasible, the Ship Control Safety Officer shall be a commissioned line officer. If not a regularly assigned OOD/JOOD, he/she must have demonstrated proficiency to the Commanding Officer or his/her designated representative prior to designation. This officer will ensure that steering control station personnel acknowledge and comply with all orders of the Conning Officer. He/She shall assist as necessary in the event of a steering casualty and will have no other duties while assigned.

436. SERGEANT OF THE GUARD. The Sergeant of the Guard will be assigned from the Marine Detachment (when embarked). When no Marine Detachment is embarked, these duties will be performed by the Duty Master-At-Arms. The duties as assigned by the Commanding Officer shall include the following:

a. Posting and proper performance of all members of the marine guard.

b. Posting and proper performance of all ship's internal security sentries not otherwise assigned.

c. Knowledge of SECNAVINST 5530.4A, SECNAVINST 5500.29B, and OPNAVINST 5530.14B concerning security forces, physical security and loss prevention, and the use of deadly force.

437. CONDITION IV (Peacetime Readiness). Condition IV watches require an adequate number of qualified/personnel for the safe and efficient operation of the ship and permits the best economy of personnel assignment to watches. Requirements for Condition IV are:

a. No weapon batteries are manned.

b. The engineering plant is ready for speeds as ordered.

c. Material condition Yoke is modified for access during daylight.

d. Complete surface lookout coverage is provided. Air lookouts are on duty when flight operations are in progress in the vicinity.

e. Combat Information Center (CIC) is manned sufficiently. Exterior/interior communications are manned sufficiently to cover the circuits in use.

f. Aircraft are in the condition of readiness required by the flight schedule.

Figure 4-2 shows a sample generic condition IV watch organization. However, specific watches and their responsibilities are found in the Ship's Manning Document and/or the Combat Systems Doctrine for individual ship types.

438. CONDITION III (Wartime/Heightened/Tension Readiness). Condition III watches require sufficient number of personnel to man a limited number of weapons systems for prolonged periods. Condition III must provide the capability to conduct or repel an urgent attack while the ship is called to General Quarters. The non-weapon related requirements of Condition IV also apply to Condition III.

Actual watches manned during Condition III will vary depending on the ship's combat systems configuration. Specific watches and their responsibilities are found in the Ship's Manning Document and/or the Combat Systems Doctrine for individual ship types.

439. CONDITION I (General Quarters). Condition I requires the manning of all weapons systems, sensors, damage control, and engineering stations. Material condition Zebra is set throughout the ship, and engineering systems are configured for maximum flexibility and survivability. With all hands at General Quarters stations, the ship is prepared to fight at its maximum capability.

As with Condition III, the individual stations manned during Condition I are ship specific. Specific watches and their responsibilities are found in the Ship's Manning Document and/or the Combat Systems Doctrine for individual ship types.

440. THE WATCH ORGANIZATION IN-PORT

a. For the basic peacetime in-port watch organization the Commanding Officer should maintain the maximum feasible number of duty sections. To reduce the total number of hours personnel are required to be on board for work and duty, each duty section shall be the minimum size necessary to ensure safety, security, and the performance of required functions. When in defense condition (DEFCON) five, ships moored pier-side in U. S. ports should maintain six duty sections, or, if less, as many sections as the Commanding Officer determines can be qualified in duty